



Farmer's Level Motivation on Sunflower Cultivation in a Rice Based Cropping Pattern of Patuakhali District

Aparajita Badhan^{1*}, Md. Golam Rabbani Akanda² and A. T. M. Sanaul Haque²

¹*Patuakhali Science and Technology University, Dumki, Patuakhali-8602, Bangladesh.*

²*Department of Agricultural Extension and Rural Development, Faculty of Agriculture, Patuakhali Science and Technology University, Dumki, Patuakhali-8602, Bangladesh.*

Authors' contributions

This work was carried out in collaboration between all authors. Author AB carried out all research work and performed the statistical analysis. Author MGRA designed the study, wrote the protocol and supervised the work. Authors AB and MGRA managed the analyses of the study of this research. Author ATMSH managed the literature searches and edited the manuscript. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/AJAEES/2017/33503

Editor(s):

(1) Ian McFarlane, School of Agriculture Policy and Development, University of Reading, UK.

Reviewers:

(1) Melmangalam Ramanathan Ramasubramaniyan, National Agro Foundation, India.

(2) Yunusa Muhammad Shuaibu, Abubakar Tafawa Balewa University, Nigeria.

Complete Peer review History: <http://www.sciencedomain.org/review-history/20054>

Original Research Article

Received 18th April 2017

Accepted 3rd June 2017

Published 15th July 2017

ABSTRACT

The aim of the study was mainly to determine and describe the extent of the motivation on sunflower cultivation and also explore relationship between the 12 selected characteristics of the farmers with motivation on sunflower cultivation. The study was designed with mixed method approach where, both qualitative and quantitative analyses are blended in a rational way to have a deeper understanding about research problems. The study was conducted in Dumki and Patuakhali Sadar Upazilla of Patuakhali district, Bangladesh. The whole period of the study was six months from 01 January to 30 June 2016. Simple random sampling technique was used to select 110 farmers engaged in sunflower cultivation. In addition case study, focus group discussions, Key informant interviews were used to collect data. Data was collected by face to face interviews. Data was analyzed using descriptive statistical measures and computer software like SPSS. Pearson's

*Corresponding author: E-mail: aprambd@gmail.com;

Product Moment coefficient of correlation results showed that out of 12 independent variables, the correlation coefficients of 7 variables had positive and significant relationship with their motivation on sunflower cultivation. Multiple regression analysis showed that training experience, innovativeness, and sunflower cultivation knowledge had significant contribution towards motivation on sunflower cultivation. Training, Contact with various sources of information, Organizational participation of the farmers was vital predictors. These predictors need further investigations.

Keywords: Motivation; sunflower cultivation; cropping pattern; food security.

1. INTRODUCTION

Motivation refers to “the reasons underlying behavior” [1]. Broussard and Garrison broadly define motivation as “the attribute that moves us to do or not to do something” [2]. According to Luthan motivation can be defined as, “a process that starts with a physiological deficiency or need that activates a behavior or a drive that is aimed at a goal incentive [3]. Olatidoye asserted that it is motivation that make farmers to contribute effectively to the progress of agriculture, thereby enhancing food security [4]. Akintoye asserted that money remains the most significant motivational strategy [5]. According to him, money possesses significant motivating power in accomplishing a task.

In view of the importance of motivation the present study had been undertaken. Now a large number of people in Patuakhali district are involved in sunflower cultivation. But its benefit had remained unknown for many farmers. So it is important to motivate the unmotivated farmers. Moreover, the research related to motivation on sunflower cultivation at coastal region is rare in Bangladesh. By considering all this reasons this study had been conducted. The objectives of this study were as follows:

1. To determine and describe the extent of farmers’ level motivation on sunflower cultivation;
2. To determine and describe some selected characteristics of the farmers as follows: (age, education, sunflower cultivation experience, area under sunflower cultivation, training experience, farm size, annual income, communication exposure, cosmopolitaness, organizational participation, innovativeness, knowledge on sunflower cultivation) etc.;
3. To identify the factors responsible for forming motivation on sunflower cultivation.
4. To identify some constraints faced by sunflower farmers.

The climate and soil condition of Bangladesh is favorable for growing a variety of crops all the year round. Here large amount of human resources are available. So in Bangladesh there are great opportunities for crop diversification balancing the production of major crops with that of minor crops. Edible oil or fat is one of the most important nutrients of human foods. It plays a vital role in human nutrition as well as in our national economy. But, in Bangladesh, the per capita oil and fat consumption remained far below than its recommended intake. The present annual production of oilseed is about 764 thousand metric tons (BBS, 2012) which can't satisfy the present demand of consumption [6]. For this reason the government has to import oil. The values of imported oilseeds and edible oils were Tk 14,200 million and Tk 130,510 million in 2012, which were 285 per cent and 519 per cent higher compared to the values of 2003 [7]. In order to minimize the import cost of oilseed crops it is essential to increase oilseed production. The oilseed crops grown in Bangladesh are mustard, sesame, groundnut, linseed, niger, soybean, sunflower, safflower and castor. Among them sunflower is a newly introduced oilseed crop in Bangladesh. It is an important oil crop grown all over the world for its good quality edible oil source extracting from its seed. Now it is being grown in 16 districts in Bangladesh and the average production is about 1.2 ton/ha [8]. In some central and northern districts this plant is now being cultivated as Kharif and Rabi crop. The yield is about 760 kg per hectare. It takes about 90-110 days for harvesting. Its seed contain 44-45% of edible oil. Unlike erucic acid in rapeseed, it has linolenic acid as an important constituent of sunflower oil. Its containing linolenic acid is beneficial for human health.

The land area of Bangladesh is about 130,168 km². From this total area coastal region covers 29,000 km² which is about 20% of the country. The most important features of coastal region of Bangladesh are many islands between the channels, strong tidal, wind action etc. The main transportation modes in coastal region are the

waterways).The economy of Bangladesh is dependent on agriculture and it is also true for coastal region. Soil salinity has an adverse impact on agriculture. Coastal area covers more than 30% of the cultivable land and about 1.0 million hectare which is affected severely by varying degree of salinity problem during the dry season and flooding during the wet season each year [9]. All local farmers in coastal region believe that salinity in soil and water is their great challenge in agriculture. Although Bangladesh government is trying to maintain food security but food security cannot be maintained for people living in coastal region. Maximum lands in this region remain fallow in the dry (Rabi/Boro) and pre monsoon season because of high soil and water salinity and due to lack of good quality irrigation water [9].

Patuakhali district falls under coastal region. In this reason it is possible to grow three crops per year by utilizing residual soil moisture and rainfall that might lead to increase food production. Rice is dominant crop here. There is ample scope for crop diversification as it is possible to grow three crops per year in this region. Most of the lands remain fallow here. So, for utilizing fallow lands crop diversification is essential. The coastal regions are the water scarce area. Sunflower can be grown as rabi crop in the water scarce coastal regions of Bangladesh as it is low to medium drought sensitive crop. Sunflower is a good adaptive crop in coastal region. Sunflower can be cultivated coastal region for not only to meet up edible oil requirement, but also for higher farm income, to save foreign currency by reducing import of edible oil and utilizing fallow lands. Sunflower cultivation is suitable for coastal regions as it is a short duration crop, has high yield potential and has extensive adaptability in 16 districts of Bangladesh.

Meena SR, et al. conducted a study on motivational factors and constraint analysis regarding commercial production of mateera (*citrulus lanatus*) in hot arid ecosystem found that main motivational factors were economic, production and technological, socio-religious, storage and marketing, health and medicinal value, agro-ecological factors etc. [10]. Obaniyi KS et al. conducted a study on factors motivating incentives of farmers in rice production training programmes(a case study of olam/usaid/adp/first bank programme) [11]. Among the motivational factors friendship was ranked first with mean of (2.711) and standard deviation of (1.351), self-recognition was ranked second. Other

motivational factors were market availability, equipment acquisition, profitability, personal needs, loan, gaining knowledge, household need etc. Hussin MRM et al. found seven factors that encouraged the small farmer's involvement in the field of entrepreneurship. These factors were environment, capital, training, customer focus, management knowledge, marketing knowledge and cooperation [12].

"The Motivation for Organic Grain Farming in the United States: Profits, Lifestyle, or the Environment" this study was conducted by Peterson HH et al. [13]. The objective of the study was to identify and quantify the motivations for organic grain farming in the United States. Results provide evidence that many organic grain producers had more than a single motivation and that younger farmers are more likely to be motivated by environmental and lifestyle goals than older farmers. The Influence of Selected Factors of Motivation on Women's Participation in Contract Sugar Cane Farming in Mumias Division, Kakamega County, Kenya was conducted by Ambani et al. [14]. Results of the study indicated that most of the women were highly influenced by property ownership, membership in advocacy bodies, and representation in investment institutions with a significance of 0.000, 0.000 and 0.000 respectively.

2. MATERIALS AND METHODS

The study was conducted in Dumki and Patuakhali Sadar upazilla of Patuakhali district. Only sunflower cultivating farmers constituted the population of the study. For this purpose an up-to-date list of the farmers was prepared with the help of respective union parishad personnel, sub-assistant agricultural officer, NGO personal and local leaders. The list comprised of 1100 farmers and these farmers constituted the population of this study. Out of them 10% of the population that is 110 sunflower farmers were considered as the representative of the six unions namely Badarpur which are under Patuakhali Sadar upazilla and Sreerampur, Angaria, Pangashia, Labukhali, Muradia under Dumki upazilla. Besides, a reserve list of 10 percent of the sample size was also prepared to replace any respondent who could not be made available during data collection despite all attempts.

Socio-economic characteristics: These include variables age, education, sunflower cultivation experience, sunflower cultivation area, training

experience, farm size, annual income, communication exposure, cosmopolitaness, organizational participation, innovativeness and sunflower cultivation knowledge. Motivation on sunflower cultivation, the dependent variable was used to measure farmer's motivation on 19 statements related to motivation on sunflower cultivation.

Statistical software SPSS 16 was used for data analysis. Descriptive statistical measures such as (frequency, range, mean, percentage distribution, standard deviation, rank order, categories etc.) were used to describe and interpret data. Effect of selected factors on motivation of farmers in sunflower cultivation was determined by using regression co-efficient. In order to estimate the respondent's motivation on sunflower cultivation the following multiple regression equation was used.

$$Y_i = \alpha + \beta X_i + \varepsilon_i$$

Where,

Y = Motivation of farmer's (obtained score)

X₁= Age of the farmers (year)

X₂= Education of farmers (year of schooling)

X₃= Sunflower cultivation experience (year)

X₄= Sunflower cultivation area (decimal)

X₅= Training experience (no. of days)

X₆= Farm size (hectare)

X₇= Annual income (Tk.)

X₈= Communication exposure (frequency of contact)

X₉= Cosmopolitaness (no. of visits)

X₁₀= Organizational participation (obtained score)

X₁₁= Innovativeness (obtained score)

X₁₂= Knowledge of sunflower cultivation (obtained score)

ε_i 's are random error components which are independently and normally distributed with mean zero and variance σ^2 .

To find out the relationships between motivation and selected characteristics of the farmers Pearson's product Moment Correlation (r) was used. Five percent level of significance was used to accept or reject any null hypothesis.

Table 1. Description of variables used in the regression model

Variable name	Variables description and Unit of Measurement
(i) Dependent variable	
Motivation	Motivation on sunflower cultivation, 5 point Likert type scale.
(ii) Independent variable	
1. Age	Age of the farmers in years.
2. Education	Year of schooling.
3. Sunflower cultivation experience	Completed years of sunflower cultivation.
4. Area under sunflower cultivation	Total area under sunflower cultivation in acre.
5. Training experience	Number of days training received.
6. Farm size	Total farm size of household in hectare.
7. Annual income	Sunflower farmer's total income in taka in "ooo" taka/year.
8. Communication exposure	No. of contact to selected information source.
9. Cosmopolitaness	No. of visits person made to selected places.
10. Organizational participation	Organizational participation of farmers in various organizations (whether as a general member, executive member, an officer of executive member or no participation and then score was given).
11. Innovativeness	Time duration (whether they had adopted an innovation after knowing about it such as IPM, Green manure, cow dung and whether they practiced it within 4 years or more, 3 years, 2 years or 1 year etc and then score was given).
12. Knowledge on sunflower cultivation	Scores obtained when asked related questions.

3. RESULTS AND DISCUSSION

3.1 General Characteristics of Respondents

Majority, 61.00 percent and 34.50 percent of the farmers were middle and young aged. This might be an indication that motivation of sunflower cultivation does not depend on special aged groups. It was found that a high proportion of sunflower growers 44.60 percent had primary level of education. This might be due to as highly educated person in those villages are involved in diversified activities. Among sunflower farmers 81.8 percent had short term sunflower cultivation experience. This might be an indication that after observing the benefits of sunflower cultivation the newly motivated sunflower farmers had been increased. Approximately 58.20 percent farmers had medium sunflower cultivation area. The probable reason was some of them had to lease land. Majority of the farmers, 48.18 percent had medium training experience. Training experience had contributed much for their motivation. This may be due to training helps farmer to conceptualize, understand and diagnose the gravity and application of useful information about sunflower production. Among cultivars 76.4 percent had small and 16.40 percent had medium farm size. The reason behind this was as they had low land and had to lease land for agricultural cultivation. Among sunflower farmers 47.3 percent had medium income. This may be due to as they have a few land of their own.

Majority 49.1 percent had medium communication exposure. The probable reason behind this might be to gather information about sunflower cultivation. 49.00 percent respondents had medium cosmopoliteness. The probable reason might be the introduction of sunflower cultivation and they had to go other upazillas for training. 72.7 percent respondents had low Organizational participation. This may be due to though some of them had direct contact with various organizations such as BRAC, FFS club etc. But most of them haven't held the position of executive member. 77.3 percent respondents had medium innovativeness and it is an important factor for their motivation. This might be due to most innovative person had the ability to understand and apply complex technical knowledge and he/she could cope with a high degree of uncertainty. Majority 54.5 percent respondents had medium sunflower cultivation

knowledge. The probable reason behind their knowledge was training experience. Sunflower cultivation knowledge had an important role on motivation. This might be due to have more knowledge of sunflower cultivation, farmers became aware of the recent information on the various aspects of sunflower production which reduced uncertainty and ensure better production of sunflower.

3.2 Overall Motivation of Farmers towards Sunflower Cultivation

Motivational score of the farmers ranged from 47 to 72 with the mean of 64.64 and standard deviation of 4.10. On the basis of their Motivational score, the farmers were classified into three categories as "low motivation" (47-55), "medium motivation" (56-64) and "high motivation" (above 64). The distribution of farmers according to their motivation is shown in Table 3.

Majority 50.9 percent respondents had medium motivation, 47.3 percent respondents had high motivation and 1.8 percent respondents had low motivation. So, maximum respondents had medium to high motivation.

3.3 Factors Affecting Farmer's Motivation towards Sunflower Cultivation

Data contained in Table 4. indicates that the motivational factors of the farmers that is "As NGO (BRAC) helps in growing sunflower" ranked first as its MI 392, followed by "To earn quality food and cloth for family" (387) as 2nd, "After noticing the demonstration plot" (385) as 3rd, "For the hope of getting free fertilizer, seed etc." (370) as 4th, "For increasing own efficiency" as (340) 5th. The other motivational factors are for achieving knowledge about new technology, to get training allowance, to lead a secured life at oldage, inspiration from the friends and relatives, to prove personal ability etc.

3.4 Problems Faced by the Sunflower Farmers

Through interview schedule researcher enlisted and ranked five main problems which were faced by the farmers during sunflower cultivation. The problems were given (Table 5).

Table 2. Socio economic characteristics of farmers

Characteristics of the farmers	Range Observed	Categories	Respondents		Mean	Standard deviation
			Number	Percent		
Age	25-70	Young aged (up to 35years)	38	34.50	44.93	9.49
		Middle aged (36-50 years)	67	61.00		
		Old aged (above 50 years)	5	4.50		
Education	0-18	Illiterate 0	25	22.70	4.77	3.70
		Primary education (1-5)	49	44.60		
		Secondary education (6-10)	33	30.00		
		Above secondary education (above 10)	3	2.70		
Sunflower cultivation experience	3 to 8	Short term experience (3-5)	90	81.80	4.18	1.22
		Long term experience (6-8)	20	18.20		
Area under sunflower cultivation	.06 to 0.44	Low (up to 0.13)	24	21.80	0.24	0.10
		Medium (0.14-0.33)	64	58.20		
		High (above 0.33)	22	20.00		
Training experience	0 to 8	No experience (0)	6	5.45	2.85	1.43
		Short experience (1-3)	47	42.70		
		Medium experience (4-6)	53	48.18		
		Long experience (above 6)	4	3.60		
Farm size	0.13 to 3.00	Marginal (above .02-below 0.2)	4	3.60	0.88	0.56
		Small (0.21-1.00)	84	76.40		
		Medium (1.01-3.00)	18	16.40		
		Large (above 3.00)	4	3.60		
Annual income	80-120	Low income (80-93)	37	33.60	98.26	9.98
		Medium income (94-107)	52	47.30		
		High income (above 107)	21	19.10		
Communication exposure	28-52	Low exposure (28-36)	32	29.10	39.20	6.27
		Medium exposure (37-45)	54	49.10		
		High exposure (above 45)	24	21.80		

Characteristics of the farmers	Range Observed	Categories	Respondents		Mean	Standard deviation
			Number	Percent		
Cosmopolitaness	6-22	Low cosmopolitaness (up to 7)	50	45.50	10.00	3.77
		Medium cosmopolitaness (8-14)	54	49.00		
		High cosmopolitaness (above 14)	6	5.50		
Organizational participation	0-8	No participation (0)	10	9.10	2.46	1.66
		Low participation (1-3)	80	72.70		
		Medium participation (4-6)	15	13.70		
Innovativeness	11-24	High participation (above 6)			18.12	3.34
		Low innovativeness (11-15)	11	10.00		
		Medium innovativeness (16-20)	85	77.30		
Sunflower cultivation knowledge	27-40	High innovativeness (above 20)	14	12.70	35.48	2.67
		Low (27-31)	6	5.50		
		Medium (32-36)	60	54.50		
		High (above 36)	44	40.00		

Table 3. Classification of farmers according to their motivation

Categories	Farmers		Mean	Standard deviation
	Number	Percent		
Low motivation	2	1.8	64.64	4.10
Medium motivation	56	50.9		
High motivation	52	47.3		
Total	110	100.0		

Table 4. Rank order of the motivational factors towards sunflower cultivation

Sl. no.	Factors affecting farmers motivation/Statements	Motivation index	Rank
1	As NGO (BRAC) helps in growing sunflower	392	1
2	To earn quality food and cloth for family	387	2
3	After noticing the demonstration plot	385	3
4	For the hope of getting free fertilizer, seed etc.	370	4
5	For increasing own efficiency	340	5
6	For achieving knowledge about new technology	330	6
7	To get training allowance	310	7
8	To lead a secured life at oldage	294	8
9	Inspiration from the friends and relatives	290	9
10	To prove personal ability	270	10
11	With hope to be the best farmer of the village	260	11
12	To achieve profitability	257	12
13	For getting good price	250	13
14	For using land rather keeping fallow	230	14
15	For the advise of sub-assistant agriculture officer	220	15
16	For the leadership	200	16
17	With a hope of getting prize	130	17
18	For the hope of more social status	100	18
19	Strong recommendation by the SAAO	90	19

Source: Author's own calculation from field survey data, 2016

Table 5. Distribution of problems faced by the farmers in a rank order

SL	Problem	Frequency	Rank
01	Stem rot	100	1
02	Less irrigation facility	90	2
03	High input cost (seed)	80	3
04	Damage caused by the birds	60	4
05	Damage caused by the Humans	50	5

Data contained in Table 5 indicates that “Stem rot (100)” ranked first as problem faced by farmers when cultivating sunflower, followed by “less irrigation facility (90)” as 2nd, “high input cost (seed) (80)” as 3rd, “damage caused by the birds (60)” as 4th, “Damage caused by the humans (50)” as 5th.

3.5 Correlation Analysis among Motivation of Sunflower Cultivation and Selected Variables

The findings of Table 6 reveal that variables such as sunflower cultivation experience, training

experience, communication exposure, cosmopolitanness, organizational participation, innovativeness and sunflower cultivation knowledge had positive and significant relationship with motivation on sunflower cultivation. This indicates that with the increase of sunflower cultivation experience, training experience, communication exposure, cosmopolitanness, organizational participation, innovativeness and sunflower cultivation knowledge the motivation on sunflower cultivation was also increased. Among them only one variable farm size had negative and non significant relationship towards motivation on sunflower cultivation which indicates that with the

increase of farm size the motivation of sunflower cultivation had been decreased. However, other four variables namely age, Education, Sunflower cultivation area, annual income had positive and non significant relationship with motivation of sunflower cultivation which indicates that these variables are not an important factor towards motivation on sunflower cultivation.

3.6 Stepwise Multiple Regression Analysis Explaining Contribution of Variables to the Farmer’s Motivation of Sunflower Cultivation

To determine the factors influencing farmer’s motivation on sunflower cultivation a step wise multiple regression analysis was carried out. The regression model includes all of the independent variables which had significant correlations with the motivation. The dependent variable was the respondent’s motivation on sunflower cultivation which was defined as their scores obtained from the statements associated with 19 selected motivational factors.

There were 12 independent variables entered in the model, out of which only 4 variables had a significant influence at the 5% level of significance of farmer’s motivation on sunflower cultivation. As shown in Table 7, training experience, sunflower cultivation knowledge, innovativeness, sunflower cultivation experience were found to have a positive influence on respondents ‘motivation on sunflower cultivation. The R² value was 0.703 and F value was 62.094, which were significant at 0.000 levels. The R²

value indicated that 70.3 percent of the total variation in the motivation of the farmers could be explained by these 4 variables.

The variable that had the greatest influence on farmers’ motivation on sunflower cultivation was training experience with the $\beta_1=1.263$, implies that when training experience of the farmer increases by a unit then their motivation towards sunflower cultivation increases by 1.263 units. Similarly, Sunflower cultivation knowledge, $\beta_2=.374$, implies that when sunflower cultivation knowledge of the farmer increases by a unit then their motivation towards sunflower cultivation increases by .374 units. Similarly, innovativeness $\beta_3=.220$, implies that when innovativeness of the farmer increases by a unit then their motivation towards sunflower cultivation increases by 0.220 units. However, Sunflower cultivation experience $\beta_4=.509$, implies that when sunflower cultivation experience of the farmer increases by a unit then their motivation towards sunflower cultivation increases by 0.509 units.

The unique contribution of the variables was also determined by taking the changes in R² value occurred for entry of a particular variable in the stepwise regression model. The results of Table 8 shows that training experience along could explain 60.5 percent of the total variation in the farmer’s motivation on sunflower cultivation and other three variables namely sunflower cultivation knowledge, innovativeness, sunflower cultivation experience could explain 5.3, 2.8 and 1.7 percent variation respectively in case of motivation.

Table 6. Correlation analysis among motivation of sunflower cultivation and selected variables

Dependent variable	Independent variable (Farmers characteristics)	Coefficient of correlation (r)
Motivation on sunflower cultivation	1. Age	.069 ^{NS}
	2. Education	.000 ^{NS}
	3. Sunflower cultivation experience	.524**
	4. Sunflower cultivation area	.090 ^{NS}
	5. Training experience	.778**
	6. Farm size	-.076 ^{NS}
	7. Annual income	.019 ^{NS}
	8. Communication exposure	.724**
	9. Cosmopoliteness	.565**
	10. Organizational participation	.381**
	11. Innovativeness	.654**
	12. Knowledge on sunflower cultivation	.673**

**=Significant at .01 level, NS=Not significant, *=Significant at .05 level
 Source: Author’s own calculation using SPSS from field survey data, 2016

Table 7. Results of multiple regression analysis

Predictor variables	B	Standard error	β	t	p
Constant	41.662	3.490		11.937	.000
Training experience	1.263	0.227	0.441	5.575	.000
Sunflower cultivation knowledge	0.374	0.108	0.243	3.447	.001
Innovativeness	0.220	0.089	0.179	2.472	.015
Sunflower cultivation experience	0.509	0.208	0.151	2.447	.016

$R^2=0.703$, $F=62.094$ and $P=0.000$

Table 8. Change in multiple R^2 for entry of the said variable into the stepwise multiple regression models

Model	Variables	R^2	Adjusted R^2	Std. error of the estimate	R^2 change	Variance explaining (percent)	Sig-level
1	Training experience	.605	.601	2.590	.605	60.5	.000
2	Sunflower cultivation knowledge	.658	.651	2.423	.053	5.3	.000
3	Innovativeness	.686	.677	2.331	.028	2.8	.003
4	Sunflower cultivation experience	.703	.692	2.278	.017	1.7	.016

4. CONCLUSIONS AND RECOMMENDATIONS

The study showed that main motivational factors were NGO (BRAC) that helped in growing sunflower, earning quality food and cloth for family, noticing demonstration plot, hope of getting free fertilizer, seed, increasing own efficiency etc. The result showed that sunflower cultivation experience, training experience, communication exposure, cosmopolitaness, organizational participation, innovativeness and sunflower cultivation knowledge had positive and significant relationship with motivation on sunflower cultivation. In addition, multiple regression analysis showed that training experience, agricultural knowledge, innovativeness, sunflower cultivation experience had significant contribution on respondent's motivation on sunflower cultivation.

Sunflower is a newly introduced oilseed crop in Bangladesh. Therefore, the implementing agencies need to keep this in view for its dissemination. Though a majority of the farmers were motivated for sunflower cultivation but its benefit had remained unknown for many farmers. Hence, there is a need for extension activities to motivate the unmotivated one.

ACKNOWLEDGEMENTS

The authors expresses their great indebtedness to the Ministry of Science and Technology of

Bangladesh for the financial support by giving National Science and Technology (N.S.T.) Fellowship, Funded by Ministry of Science and Technology, Government of the Peoples Republic of Bangladesh and to the Department of Agricultural Extension and Rural Development, Faculty of Agriculture, Patuakhali Science and Technology University (PSTU), Patuakhali, Bangladesh, for providing logistic support to accomplish the research.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

- Guay F, Chanal J, Ratelle CF, Marsh HW, Larose S, Boivin M. Intrinsic, identified, and controlled types of motivation for school subjects in young elementary school children. *British Journal of Educational Psychology*. 2010;80(4):711–735.
- Broussard SC, Garrison MEB. The relationship between classroom motivation and academic achievement in elementary school-aged children. *Family and Consumer Sciences Research Journal*. 2004;33(2):106–120.
- Luthans F. *Organisational behaviour*. 8th Ed; Boston: Irwin McGraw-Hill; 1998.

4. Olatidoye, GB. Resource mobilization and motivation of rural farmers for agricultural production: Agricultural extension a comprehensive treatise with model questions and glossary. 2008;117-119.
5. Akintoye IR. The place of financial management in personnel psychology. A Paper Presented as Part of Personnel Psychology Guest Lecture Series. Department of Guidance and Counselling; University of Ibadan, Nigeria; 2000.
6. BBS. Statistical Yearbook of Bangladesh. Dhaka, Bangladesh Bureau of Statistics; 2012.
7. Bangladesh Bank. Monthly economic trends. Dhaka, Bangladesh. Statistics Department; Bangladesh Bank; 1992.
8. Haque MMS, Ahmed H. Status of sunflower research in Bangladesh. Conference Paper, Paisa, Italy; 1992.
9. Karim Z, Hussain SG, Ahmed M. Salinity problems and crop intensification in the coastal regions of Bangladesh. Soils Publication. 2010;33:17.
10. Meena SR, Singh RS, Awasthi OP, More TA. Motivational factors and constraint analysis regarding commercial production of Mateera (*Citrullus lanatus*) in hot arid ecosystem. Indian. Journal of Extension Education. 2010;46 (3-4):31-37.
11. Obaniyi KS, Akangbe, JA, Matanmi BM, Adesiji GB. Factors motivating incentives of farmers in rice production training programmes (A case study of Olam/ USAID/ADP/First Bank Programme). WebPub Journal of Agricultural Research. 2014; 2(5):74-81.
12. Hussin MRM, Asaari MHAH, Karia N, Hamid AJA. Small farmers and factors that motivate them towards agricultural entrepreneurship activities. Journal of Agribusiness and Marketing. 2012;5: 47-60.
13. Peterson HH, Barkley A, Cascante AC, Kastens TL. The motivation for organic grain farming in the United States: Profits, lifestyle, or the environment? Journal of Agricultural and Applied Economics. 2012; 44(2):137–155.
14. Ambani AO, Olubandwa AA, Openda NO. The influence of selected factors of motivation on women's participation in contract sugar cane farming in Mumias Division, Kakamega County, Kenya. Journal of Economics and Sustainable Development. 2015;6:14.

© 2017 Badhan et al.; This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Peer-review history:
The peer review history for this paper can be accessed here:
<http://sciencedomain.org/review-history/20054>